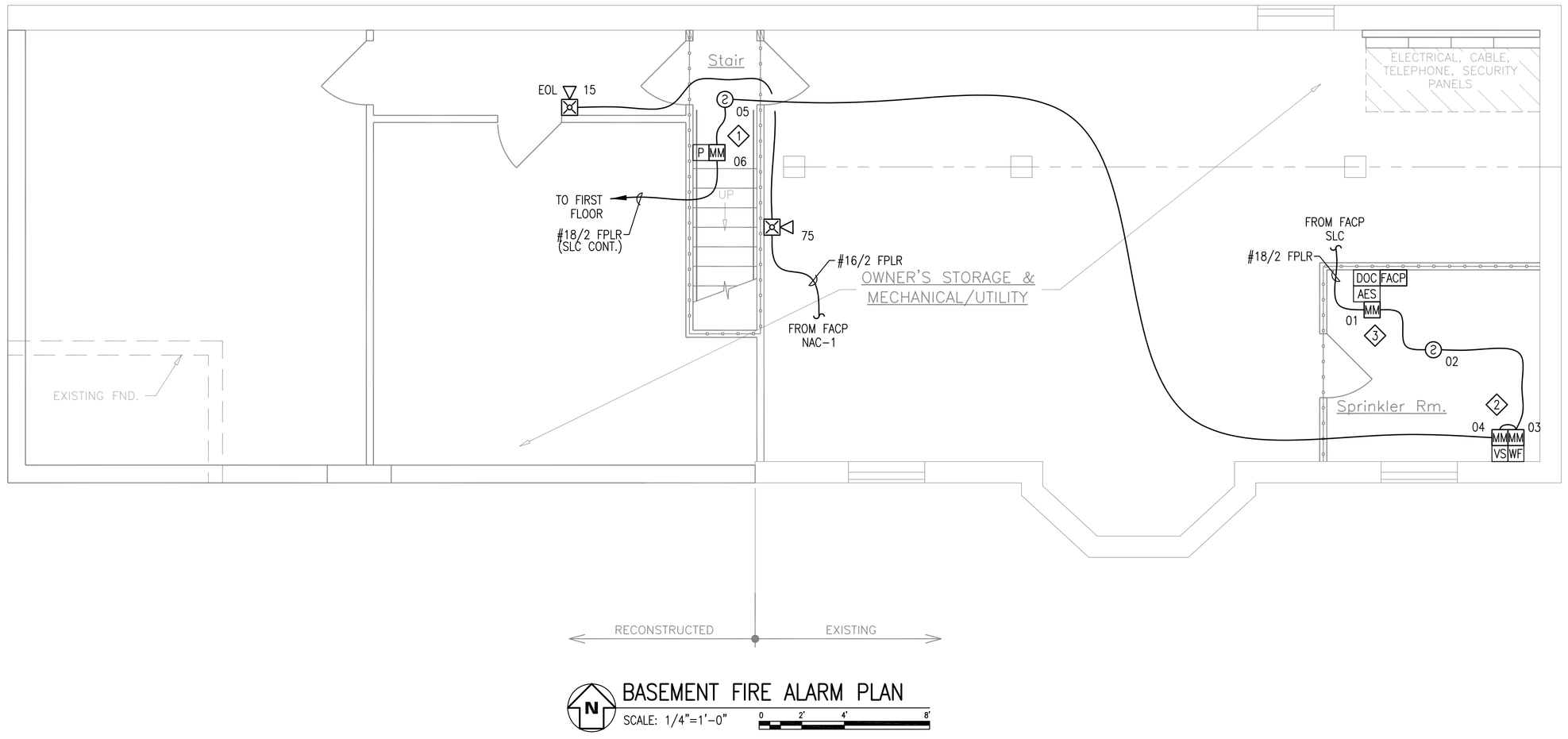

BASEMENT FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

WILMONT STREET

RESERVED FOR CITY STAMP

SHEET NOTES:

1. ADDRESSABLE MONITOR MODULE PROVIDED TO MONITOR THE CONVENTIONAL PULL STATIONS. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANITITY AND LOCATION(S).
2. ADDRESSABLE MINI MONITOR MODULE(S) PROVIDED TO MONITOR ALL WATER FLOW, PRESSURE SWITCHES, TAMPER SWITCHES AND POST INDICATING VALVES ASSOCIATED WITH THE FIRE SPRINKLER SYSTEM. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANTITY AND LOCATION(S).
3. ADDRESSABLE MONITOR MODULE PROVIDED TO MONITOR THE AES ANTENNA CUT INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANITITY AND LOCATION(S).

FACP Battery Calculation

8/15/2017

PROJECT NAME:	52 WILMOT STREET				
Required Standby Time:	24	Hours			
Required Alarm Time:	5	Minutes			
Regulated Load in Standby					
Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
FACP – MS-9050UD MAIN CIRCUIT BOARD	1	X	0.12000	=	0.12000
ANN-80 REMOTE ANNUNCIATOR	1	X	0.01500	=	0.01500
SD355 SMOKE DETECTOR	4	X	0.00030	=	0.00120
MMF-301 MINI MONITOR MODULE	6	X	0.00038	=	0.00228
BG-12 PULL STATION	3	X	0.00000	=	0.00000
TOTAL STANDBY LOAD					0.13848
Regulated Load in ALARM					
Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
FACP – MS-9050UD MAIN CIRCUIT BOARD	1	X	0.00000	=	0.00000
ANN-80 REMOTE ANNUNCIATOR	1	X	0.00000	=	0.00000
SD355 SMOKE DETECTOR	4	X	0.00000	=	0.00000
MMF-301 MINI MONITOR MODULE	6	X	0.00000	=	0.00000
BG-12 PULL STATION	3	X	0.00000	=	0.00000
NAC-1 (See Voltage Drop Calculations)	1	X	0.25500	=	0.25500
NAC-2 (See Voltage Drop Calculations)	1	X	0.22600	=	0.22600
TOTAL ALARM LOAD					0.48100
Battery Requirements					
Standby Load			Required Standby Time in Hours		
Current (Amps)	0.13848	X	24.00000	=	3.32352
Alarm Load			Required Alarm Time in Hours		
Current (Amps)	0.48100	X	0.08333	=	0.04008
Total Ampere Hours (before derating factor)					3.36360
Derating Factor				X	1.2
TOTAL AMPERE HOURS REQUIRED				=	4.03632
BATTERIES TO BE PROVIDED (2 – 12v)					7 AH

Point to Point NAC Voltage Drop Calculation

8/15/2017

Project Name	52 WILMOT STREET			
Circuit Number	NAC-1			
Nominal System Voltage	20.4	volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0	volts		
Distance from source to 1st device	35	feet	16	4.89
Wire Gauge for balance of circuit			16	4.89
Max Output Current	1.50	amps		
Total Circuit Current	0.255	amps		
End of Line Voltage	20.30	volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.176	35	20.31	0.087	0.43%
Device 2	0.079	16	20.30	0.100	0.49%
Totals	0.255	51			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

Point to Point NAC Voltage Drop Calculation

8/15/2017

Project Name	52 WILMOT STREET			
Circuit Number	NAC-2			
Nominal System Voltage	20.4	volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0	volts		
Distance from source to 1st device	30	feet	16	4.89
Wire Gauge for balance of circuit			16	4.89
Max Output Current	1.50	amps		
Total Circuit Current	0.226	amps		
End of Line Voltage	20.26	volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.079	30	20.33	0.066	0.33%
Device 2	0.017	23	20.30	0.099	0.49%
Device 3	0.079	17	20.28	0.121	0.59%
Device 4	0.017	30	20.26	0.136	0.67%
Device 5	0.017	17	20.26	0.142	0.69%
Device 6	0.017	8	20.26	0.143	0.70%
Totals	0.226	125			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	8/15/2017

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52 WILMOT STREET
PORTLAND, MAINE 04101
BASEMENT FIRE ALARM PLAN & CALCULATIONS

DRAWN	JPB UNICAD JOB #17544
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	8/15/2017
REVISION	0
SCALE	1/4"=1'-0"

FA-2